

### **Amendments to the Claims**

Please amend Claims 34, 37, 40, 41, 44, and 47. The Claim Listing below will replace all prior versions of the claims in the application:

### **Claim Listing**

1-33. (Canceled)

34. (Currently amended) A method for conducting a multiplexed experiment, comprising:  
providing a first class of ~~carrier~~ carriers in a first vessel, each carrier in the first class having a first optically detectable code, and a second class of ~~carrier~~ carriers in a second vessel, each carrier in the second class having a second optically detectable code wherein ~~the code exists throughout the structure of the carrier~~ the first class of carriers and the second class of carriers comprise a distinct shape from each other, and wherein each of the carriers has at least one flat viewing surface and a shape that self-orientes the viewing surface to face a viewing direction [[,]];  
~~attaching coupling~~ attaching coupling a first type of analyte to the first class of carriers in the first vessel, and ~~attaching coupling~~ attaching coupling a second type of analyte to the second class of carriers in the second vessel[[,]];  
forming a mixture of carriers from the first vessel and ~~the second vessels~~ vessel, the mixture having substantially equal numbers of carriers from each vessel[[,]];  
randomly dispersing a portion of the mixture to an examination site on a surface, ~~the carriers of the first and second classes being distributed to random positions across the examination site~~[[,]];  
~~reacting~~ contacting the portion of the mixture with a test substance[[,]];  
acquiring at least one image of at least a portion of the mixture of carriers at the examination site on the surface[[,]]; and  
using code information from the at least one image to interpret results of the experiment, ~~wherein each of the carriers has at least one flat viewing surface and a shape that self-orientes the viewing surface to face a viewing direction~~ thereby conducting a multiplexed experiment.

35. (Canceled)
36. (Previously presented) The method of claim 34, wherein each carrier has at least one transparent portion.
37. (Currently amended) The method of claim 34, wherein each at least one carrier comprises a combination of fused fibers of various colors, the colors and relative positions of the fibers indicating the code.
38. (Previously presented) The method of claim 34, wherein the coupling step includes attaching biological cells to carriers in each vessel, the code on each carrier identifying a characteristic of a cell coupled to the carrier.
39. (Previously presented) The method of claim 34, wherein analytes are coupled to carriers covalently.
40. (Currently amended) The method of claim 34, wherein the ~~reacting~~ contacting step is performed before the dispersing step.
41. (Currently amended) A method for conducting a multiplexed experiment, comprising:  
providing a first class of carriers in a first vessel, each carrier in the first class having a first optically detectable code, and a second class of ~~earlier~~ carriers in a second vessel, each ~~particle~~ carrier in the second class having a second optically detectable code  
wherein ~~the code exists throughout the structure of the carrier~~ the first class of carriers and the second class of carriers comprise a distinct shape from each other[[,]];  
coupling a first type of analyte to carriers in the first vessel, and ~~attaching~~ coupling a second type of analyte to carriers in the second vessel[[,]];  
forming a mixture of carriers from the first vessel and ~~the second vessels~~ vessel, the mixture having substantially equal numbers of carriers from each vessel[[,]];  
randomly dispersing a portion of the mixture to an examination site on a surface[[,]]; ~~the carriers of the first and second classes being distributed to random positions across the examination site;~~  
contacting the portion of the mixture with a test substance;

directing an imaging device toward the examination site, the ~~image~~ imaging device being configured to acquire images of carriers at the examination site[[,]]; acquiring a set of images of carriers at the examination site, each image corresponding to a different spectral band[[,]]; and operating a computer program to identify carriers of the same class by using the images to develop a mask of carriers of the same class, and detecting one or more reporting modalities with the mask, thereby conducting a multiplexed experiment.

42. (Previously presented) The method of claim 41, wherein each of the carriers has at least one flat viewing surface and a shape that self-orientes the viewing surface to face a viewing direction substantially perpendicular to the surface.
43. (Previously presented) The method of claim 41, wherein each carrier has at least one transparent portion.
44. (Currently amended) The method of claim 41, wherein ~~each~~ at least one carrier comprises a combination of fused fibers of various colors, the colors and relative positions of the fibers indicating the code.
45. (Previously presented) The method of claim 41, wherein the coupling step includes attaching biological cells to carriers in each vessel, the code on each carrier identifying a characteristic of a cell coupled to the particle.
46. (Previously presented) The method of claim 41, wherein analytes are coupled to carriers covalently.
47. (Currently amended) The method of claim 41, wherein the ~~reacting~~ contacting step is performed before the dispersing step.